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# Basin Outlook Reports and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, contact:

#### How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthy c. semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthy and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

All programs and services of the USDA Soil Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

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Soll Conservation Service

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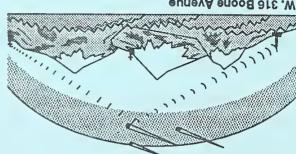
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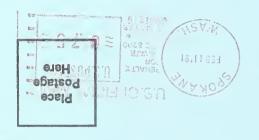
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February 1, 1992

Basin Outlook Reports



In addition to basin outlook reports, a Water Supply Forecast for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.

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LEGETA



# WASHINGTON WATER SUPPLY OUTLOOK FEBRUARY 1992



#### **GENERAL OUTLOOK:**

WASHINGTON WATER SUPPLY OUTLOOK REPORT CURRENT AS OF 2/10/92 1992: Warm temperatures and heavy rainfall brought flooding to several Westside streams during January. Temperatures were above normal and varied from three degrees above in the Olympic Basin to seven degrees above in the Okanogan Basin. The snowpack varies from 36% in the Elwah River Basin to 129% in the Chelan Basin. Washington's SNOTEL sites were averaging 91% of normal snowpack on February 1 (by February 7, the state wide average was 90%). January precipitation was 97% of normal state wide and varied from 63% of average in the Walla Walla Basin to 157% in the Olympic Basin. to-date precipitation varies from 66% in the Okanogan to 114% in the Walla Walla Basin. February 1 reservoir storage is generally good, with reservoirs in the Yakima Basin at 92% of average and 55% of capacity. Forecasts for 1992 runoff vary from 100% of average for the Bumping River to 69% for the Snake River below Lower Granit Dam. January streamflows varied from 27% of normal on the Walla Walla River near Milton Freewater, Oregon, to 111% on the Skagit River.

#### **SNOWPACK:**

The Portland computer system has changed to a 30 year average 1961-1990. This has caused a rise in the Washington snowpack as to percent of normal because four of the past five years were low snowfall years. Snowpack varies over the state from 129% of normal in the Chelan Basin to 36% in the Elwah River in the Olympic Basin. Some snowpack along the west slopes of the Cascade Mountains includes the Green River with 66%, and the Skagit 119%. Snowpack in the Okanogan is at 90%, and the Spokane at 91%. SNOTEL sites in Washington have a snowpack 91% of average for February 1, state wide. Maximum snow cover, with a water content of 47.5 inches is at Paradise on Mount Rainier. This site would normally have 38.5 inches of water content on February 1.

#### PRECIPITATION:

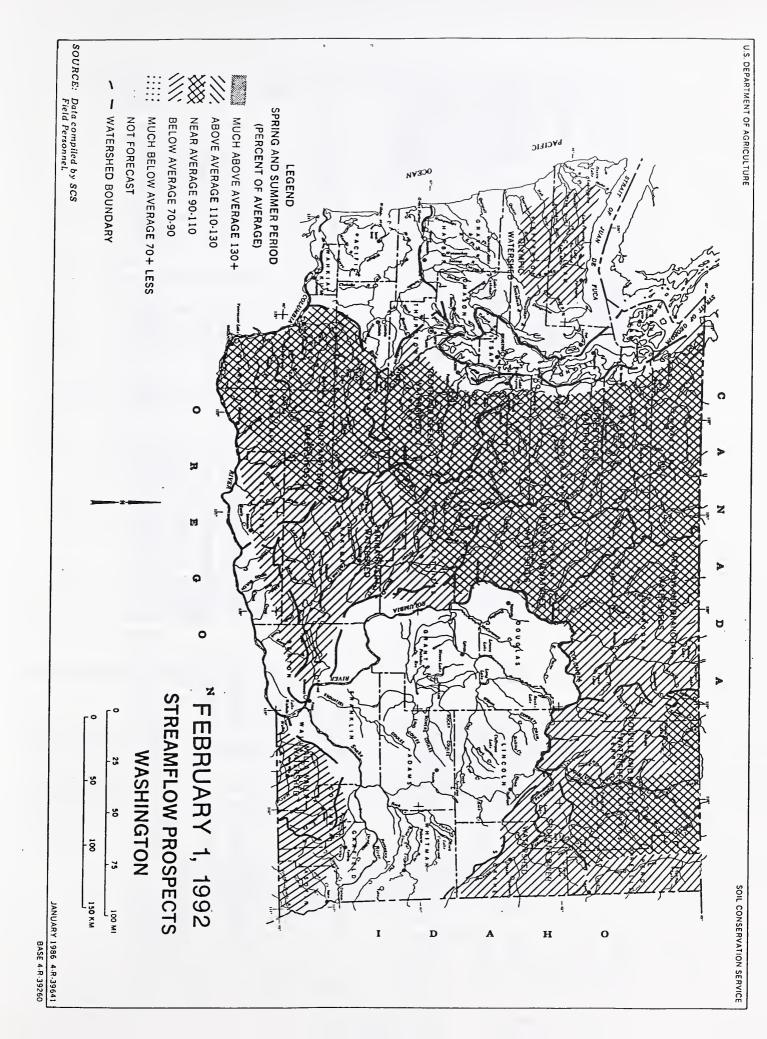
January precipitation from National Weather Service stations was 97% of average state wide. The year-to-date precipitation state wide is 89% it varied from 114% of normal in the Walla Walla Basin to 66% in the Okanogan Basin. January precipitation varied from 157% of average in the Olympic Basin, to 63% in the Walla Walla Basin. SNOTEL sites in Washington showed high elevation year-to-date precipitation values to be 77%. Maximum year-to-date precipitation was at the June Lake SNOTEL site near Mt. St. Helens, with 77.0 inches since October 1, 1991; normal for this site would be 82.0 inches.

#### RESERVOIR:

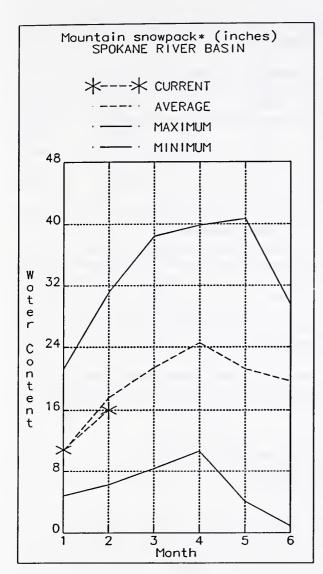
Reservoir storage in Washington is generally good for February 1. Reservoir storage in the Yakima Basin was 590,600 acre feet, 92% of normal. Storage at other reservoirs include Roosevelt at 134% of average, and the Okanogan reservoirs at 113% of February 1 normal. The power generation reservoirs contain the following: Coeur d'Alene Lake, 160,300 acre feet, or 78% of normal; Chelan Lake, 245,100 acre feet, 54% of average and 36% of capacity, and Ross Lake at 98% of average, and 72% of capacity.

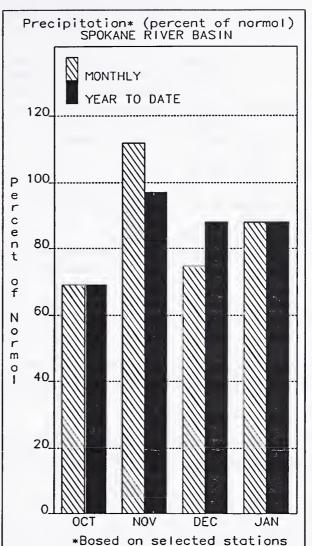
#### STREAMFLOW:

January streamflows were generally below average in Washington, however the highest in the state, the Columbia River, at Birchbank and the Skagit River at Newhalem were at 111%. Some minor flooding occurred along the Chehalis and Snohomish rivers during January. Other streamflows were the following percent of normal: the Cowlitz River, 74%; the Walla Walla River which at 27% was the lowest in the state; the Spokane River, 61%; the Yakima at the Parker, 71%. The Wenatchee River at 71% and the Methow with 72%. The Okanogan River was 75%. Forecasts for summer streamflow are for below to near average and vary from 100% of average for Bumping River to 69% of normal for the Snake River below Lower Granit Dam. February forecasts for some west side streams include: Cedar River, 86%; Skagit River, 92%; and the Dungeness River, 85%. Some east side streams include the Yakima River at Parker, 87%; the Chelan River, 86%; and the Colville River, 96%.



							5°51	9.01	1.9	12	26/62/1	2500	DEER PARK
	5.4	25.11		Z6/10/Z	0507	אכחונו כונינים הוררכות	<b>,</b> 11	7 01		••	ta acri	***************************************	DINCENESS KLAEK
		··			***	OULLCEHE RIVER							
						83A18 3A33 A72	6"72	\$.05	16.5	\$\$	1/20/65	0057	COX VALLET
7.86	2.2	30,15	œ	26/70/2	0057	MATSON LAKES AM							MORSE CREEK
1.25	7°7	30.81 36.95	09 91	26/70/2 26/70/2	001£	ROCKY CREEK AN SCHREIBERS NOV AN	7.21	9-9	0.2	ól	26/20/2	0057	MURRI CANE
2,12	5.8	35.25 35.17	901	26/70/2 26/70/2	2900	HARTEN LAKE AN HT_BLUM AN							<b>13A11 17M13</b>
8.82 5.83	8.01 2.1	38.12	291	26/70/2	0075	MA 22A9 M3Q2AL	5.9	4.6	57-1		26/10/2	0077	MOTTE ARECTER PITTON
9°57	5.01	37"17	178	26/70/2 26/70/2	2800	MA 2254 PASS AM	0.8	0.2	0.2	22	1/20/65	0077	TROUGH AZ PILLOW
• • • •	• •	37 44	-	-		m savin minen	9.25 9.25	8.55	\$7.65	29	1/20/65	3300	STEVERS PASS SAMD SD
5.21	0.88	0.21	17	2/02/65	0029	HISOR BYONE	2.11	5.12	27.85 26.45	62	26/10/2	0207	RIENERS BYZZ BIFFON
54.5	9.03	28.35	•••	20110/2	0927	BALINY PASS PILLON	7.51	5.01	9"7	SI	1/20/65	0712	LINON EAST PILLOW
0.8 7.75	22.0	2.2 21.6	100	2/03/92	0005	NEW HOSONEER LAND	36.0	5179	\$2.83	121	201/01/5	2600 2600	ETHAN LAKE
9.2	0.1	0.	0	26/20/2	1800 2800	NEWOORS CHILL	0.55	3.91	57.81	71	59/10/5	0025	CHIMMICH E.S.
26.0	2,72	43.35	121	2/02/92	2000	SMA LAUCE	5.6 7.8	3.4	8.25	**	26/10/2	0753	NOTTHERESSYS 1139378
6'2	1791	9.5	76	2/03/65	2340	MAILE PASS PILLON	9"11	9.4	5.8	72	1/20/65	0/27	956HE-HILL CREEK (4) 916HETT PASS #2
8.15 1.13	0.13	31.42	96	20/10/2	0059	22A4 21AA8	9.91	2.87	5.71	27			
9.8	0.51	9"9	22 201	2/02/92	2200	PEVILS PARK PRESEDUT CK., TRAIL							MEMATCHEE RIVER
1,75	8,33	20'8	88	20/20/2	0059	MA 2245 TOLOGO	4.23	5"04	57°74	•••	20/10/8	2270	MOTT 14 30018 3404
5.12	0.25	9.47	125	\$402/92	0009	22A9 33VA38 NA 90T NADRO	0.4	9.8	0.5	•	59/05/1	0091	13150
1.0	0.01	3.S	OL	2/02/45	0022	JIAST 33342 S3VA38							SATIAT RIVER
						SCACIT SIVER	7.15 5.25	52.0	24.85	001	2/01/65 2/02/65	0813	25M4 7H1A8
				2A/06/L	2500	OS CONTS SERVE STERABLES	9"62	9"27	32,13	• • • •	26/10/2	0099	PARK OK BIDGE PILLOW PARK OKEEK BIDGE
2.15 9.25	5.12 2.55	35.05 20.5	29	26/10/2	0103	MOTTE SEVE SHEARED	5.02	0.03	32.63	76	2/02/92	0925	W Show 311117
8.85	9.85	29.25	•••	SPLIOLS	0995	POTTE SING 203-AVLS	9.46	2.35	55.85	424	2/02/65	2000	FARM FYEE SEFFON
						NAVIS REIMONYAR	1.15 2.03	8,12	20.8	99	2/02/65	0059	CTOTOL BYZZ VN
	4177	2.81	07	26/20/2	2920	\$400Y3N 3111Y10							CHETVI PVICE BYZEK
24.5	25.4 52.9	20.65		29/10/5	0906	NOTTI & SIDER BITTON	2.9	1.5	\$7.9		26/10/2	0057	NOTITIES SHOW MONTHS
						NAVIS STALMONS	0.2	5.6 f.5	3.3	91 75	26/62/1	0007	MUTTON CREEK AT BUSTY CREEK
6*95	8.28	5.14	29	20/20/5	7100	AND BIAL ELMAGE MESS SITES	7.15 5.9	8'67	31.75		20/10/2	0059	nothe save stans
9,85	1.81 9.25	7.37 29.25	07	2/10/2	0013	3019 THINKS	8,45	8.13	1.8	76	20/20/2	0059	22A9 21MM
8"76	1.51	5.8	53	24/ED/2	0009	LESTER CHIEK LYM LAGE							METHON REVER
8.24 8.2	5,11	8.1	12	SYGS/VS	2100	59 SIAMUDH 22A19	I. U	6"76	4.23	17	28/15/1	0009	WILLE BOCKS HER CAN.
8.27	8,23	32.25	•••	SALIONS	3500	COUGAR SITIS. PILLON	7'5	7.7	1.5	50	SP/75\r	0077	TROUT CREEK CAN.
						23ALU 27710	8.7	9.4	7.2 n.s	11	2010/2	6200	SUMMERTAND RES CAN.
2.45	1.23	SA"BE	***	24/10/2	2000	POTTI	2.91	8.55	9.38	52	24/92/1	0009	SALINE STAR HTLE CAN.
2.15 A.95	8,15	39"52	***	20/10/2	0009	POTITIO SERIE BETTON	4°5	1.5	33.8	91	27/29/92	0009	MUSTY CREEK
9.52 1.15	8"23	33,5		24/10/2	2200	CATAGE PASS	9"5	2.1	1.2	12	24/15/1	0057	OTAMA LACE CAN, POSTILL LACE CAN,
• 65	,	~				NAVE STIME	8°S 2°4	2.0	3.è 8.E	11	28/82/1	0075	PA 39383 HOTTM
						43V19 31 pm	1.0	8.57 8.2	7.07	22 %	2/12/42	0065	HOMESHEE PASS CAN.
2.27	4"21	30"11	•••	20/10/2	0057	FILLS STAR EX PILLON SAMPRISE EXS PILLON	2.23	2,41	1.53	27	24/50/2	2800	RESSION CREEK CAN.
30.6	1.1	26. 27.23		24/10/2	2100	MATERIA TON'S STATES	8.8 8.8	8.51	1.2	\$1 \$2	2704/92	9029	LOST MORSE HTM CAN. MCCULLOCH CAN.
0.05	0.51	37.06	***	2/11/2	2100	BACES SON BACTON  BREES CHILDS  BREES CHILDS	9"\$	9"8	4.5	41	1/30/45	0055	TERRIDE FYEE CAN'
5. 25 5. 85	9.25	13.5s 13.5s		24/10/2	0057	POLYTO SICE PIECON	1.13	9.93	8.25 21.32	76	20/20/2	9200 9200	707714 SSW \$13VN
30.4	6'07	35,55		2/10/2	2200	PICIPIE NEW, BIFTON PRIVATER BASE BIFTON	8.07	8.23	1.4	21	20/10/5	0689	CHETCHON BILL CAN.
8.05	1.23	22.23	***	24/10/2	2000	70114 3H4 3H91	179 818	8.51	6"7 9"9	12 22	27\20\Z \$1\26\172	3200	FREEZEGUT CK., TRAIL
1.85	8,15	32.02		24/10/2	2200	ביווינג אינג אורדפא ביווינג אינג	8.45	5.52	8,15	N.	28/05/1 24/15/1	6200	BLACTOMALE PEAK CANI. EMDERRY CANI.
• • •		~				292A19 2117900 - 31A27	8°52	6,13	377	13	SALIEL	7200	AMERIOCEII LAKE CANI.
													DEVHICEN STAES
5"98	8,27	4.47	•••	20/10/2	2220	BECH RESOC PILLON TOUCHET 62 PILLON							
0.58	9.04	39.27		SPLIOLS			2"9 8"74	7°11	4.07 7.5	OL.	2/10/S	2220	30018 0300VB ORNELS SEVE: BEFFERN
1796	5"04	35,11	•••	24/10/2	0009	2020 171H 2021 1740	• /•						301/1 8144/138
8,55	49.2	2.23	06	20/20/3	0009	33971 033309							
8.2	5.5	2"0	•	24/05/1	2100	.8.8 MMATMA	8,45	8,55	8.05	59	20/10/2	0755	701714 135WW 135WW
						NEED PARATURE	rg	1,85	8.25	•••	24/10/2	2500	POTTLE DELECT
<b>ទ</b> ន	4.58	99"11	***	24/10/2	0059	MOTTE SE SENA BLIM	3.7Z	2.85	9.25 9.25	504	5P\J02\1	9119	20V1 1907
3,23	2"11	8"5	91	21/20/05	9720	BINNERS MERIC BINNERS MERIC BILLION	2.7	ייי	8.5	95	1/30/15	2500	RUE YALL TO STALOT
8,15 6,86	9.85 1.51	28,15 29,25		27/10/5	2990	8ASSE 81905 PILLON							SPOCKME BIVES
24.5	A.SZ	5,62	07	2/02/42	9450	9/00/78 3517/10 9/07/18 30/10 517/10	27	275	8"7	zz	24/22/1	0012	SERVI BIAL
8.15 8.15	1.23	34"BE	***	24/10/2	2000	NOTE   1017   3017   30108	175	8.1	2.5	ล	24/12/1	2000	MANUEL THUCH
8.27	3.6	80,27	9	\$700.42	2200	ראתב כרוב ברואו מוסחמב כאה הוררסא							SERVE TAKE THEE THEE
1.28	5"04	35,11	•••	24/10/2	0009	NOTICE 33NT 1137ND							6201
9° 22	5.97	35.88	95	24/10/2	2210	101111 2717 E3700	8.1	5.6	2.2	81.	28/05/8	01.2Z	
1.15	3.05	1.5	95	20/20/1	2210	30V1 HSLA							MAYER SALVER
21.5	8,15	33,23	92	20/02/3	\$210	COLOCION PASS CONSAL PASS	ers.	0"7	2.1	20	1/20/45	0099	Shelf 6.8.
4.52	8.65	35.02	***	24/10/2	2200	CATURE PASS BLAVING B10CE PILLON	7'6	9"21	9"06	75	1/30/45	7200 2700	GOAT CREEK HOMASHEE PASS CAN.
15.4 13.4	8.5 8.5P	7.7 29.23	64	\$701/92	2100	(A3H) 30Y1 SH1-M19	5.2 9.4	7.8	1.8	73	1/31/65	0007	EARLEON CAM.
9"11	1.5	8.8	76	24/05/1	2450	BLEVETT PASSFELLON BLEVETT PASSFELLON	7.5	9.0	8,51 8,26		26/05/1	0155	BIG UNITE RIR CAN. BUTTE CALEK
9°51	8.9 8.5	5.8 25.8	22	20/20/1	0/2>	29 9576 1139378	8.5F	7.8r	2.58	95	2/02/45	\$300	PARINES CREEK CAN.
0.57	5,52	39,51		2/10/2	2500	ANTANUM B.B. BIG BOULDER CREEK							N3V18 311133
2-6		٠.	-										
						TACINA RIVER	11.5	7°01	8.85 8.11	31	1/30/92	2100	HECEDON CKEEK HOODOO CKEEK
>-9	8.5	37"£	•••	29/10/5	9210	TROUCH 62 PILLON	3.52	1.02	29.4	62	1/20/65	0509	HEART EACT TRAIL HIZAB COCCOM
						COLOCIOM CREEK	9.81	8.15 1.71	9712 15.4e		29\10\Z	2000	BUNCHCRASS HOUPTLEON
				24 /10 /2	0077	מאנו מאנצו אווינות	8.15	8.55	39,15		2/01/2	000\$ 0267	BINCHERV22 NEVDONZ BERLON ZENEINE
8.0 9.5	6°9	22.5	22	59\02\f	0077	33333NV 334NU	9.5r	2.2 0.51	7"11 9"1	,	2/02/92	0207	MOGAZM MOTHER
2.0f	1.1	0.8	12	\$/30/92	2000	30113 TJIN319							PEND ORESTCE REVER
						11641 במפפנ							
08-1	961 W	נפוע גפ	HQQ #1	430	•	••••••			COMIEKT			• • • • • • • •	
	3VA 12J		VA NO		HOLI	VA313 35W1CD MOHS	30433VA		13177		3110	M011AV3.	35 95 90 CO NOHS





# SPOKANE RIVER BASIN &

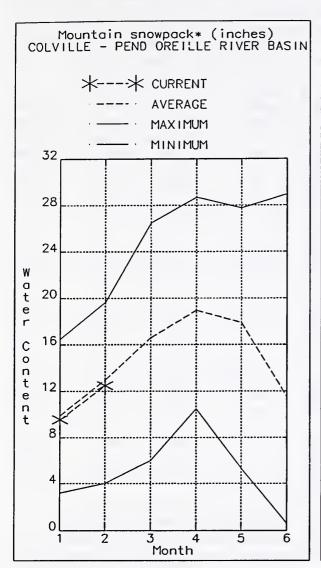
February 1, 1992: The February 1 forecasts for summer runoff within the Spokane River Basin are 94% of normal. The forecast is based on a snowpack that is 91% of average and a water year-to-date precipitation value 85% of normal. Precipitation for January was 80% of average. Temperatures in the basin were 5 degrees above normal during January. Streamflow on the Spokane River was 61% of normal for January. February 1 storage in Coeur d'Alene Lake was 160,300 acre feet, 78% of normal.

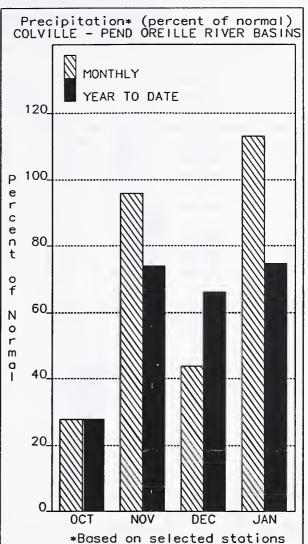
# SPOKANE RIVER BASIN Streamflow Forecasts - February 1, 1992

=======================================				========		=========		
		<<=====	= Drier ====	== Future C	onditions =	===== Wetter	====>>	
Forecast Point	Forecast	======	========	= Chance Of	Exceeding *	==========	======	
	Period	90%	70%	50% (Most	Probable)	30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	•	(% AVG.)	•	(1000AF)	
	========	:=======						
SPOKANE nr Post Falls (1,2)	APR-SEP	1360	1920	2510	92	3100	3670	2720
	APR-JUL	600	1850	2420	92	2990	4240	2627
				Ì		İ		
SPOKANE at Long Lake (2)	APR-JUL	1150		2760	94		4380	2937
				1				
=======================================								=========
SPOKANE RIVER BASII	N			1	SPOKANE	RIVER BASIN		
Reservoir Storage (10	00 AF) - End	of January	/	1	Watershed S	nowpack Analys	is - Febru	ary 1, 1992
=======================================		.=======	.========	=======		========	=======	
	Usable	*** Usabl	le Storage *	**		Numbe	r This	Year as % of
Reservoir	Capacity	This	Last	Wate	rshed	of	====	
	1	Year	Year #	vg		Data Si	tes Last	Yr Average
=======================================		.=======		====   ======				
COEUR D'ALENE	291.2	160.3	162.2 20	5.4   Spok	ane River	6	93	91
				1				
=======================================								

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) The value is natural flow actual flow may be affected by upstream water management.





# COLVILLE - PEND OREILLE RIVER BASINS: **(a)**

February 1, 1992: February 1 snow cover is 90% of average on the Pend Oreille, 104% on the Kettle and 71% on the Colville River. Snowpack at Bunchgrass Meadow SNOTEL site was 21.6 inches of water. The average February 1 reading is 18.8. Precipitation during January was 109% of average, bringing the water year-to-date to 72% of normal. January streamflow was 70% of normal on the Pend Oreille River, 111% on the Columbia at the International Boundary, and 56% on the Kettle River. The forecast for the Kettle River streamflow is 95% of normal, the Pend Oreille, 82%, and the Colville River, 96% of normal for the summer runoff period. Temperatures were seven degrees above normal for January.

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COLVILLE - PEND OREILLE RIVER BASINS
Streamflow Forecasts - February 1, 1992

				- rebruary :	*			
		_				===== Wetter		ļ
Forecast Point	Forecast	   ======		== Chance Of	Exceedina * =	============	=======	[ [
	Period	90%	70%		Probable)	l 30%	10%	ı   30-Yr Avg.
		(1000AF	, ,	•	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
======================================	APR-SEP	8320	10800	= ========   12000	<b>=====</b> ==  82	<b>=======</b>   13200	16000	 14590
TEND SKETZEE BY BOX Gailyon (172)	APR-JUL	7520	9910	l 11000	82	l 12100	14500	13380
	APR-JUN	6500	8560	9490	82	10400	12500	11570
CHAMOKANE CK nr Long Lake	MAY-AUG	1.5	5.7	8.5	90	11.3	15.5	9.4
COLVILLE at Kettle Falls	APR-SEP	69	103	   126	96	   149	183	131
	APR-JUL	62	94	115	96	136	168	120
	APR-JUN	60	88	107	96	126	155	111
KETTLE nr Laurier	APR-SEP	1020	1460	   1760	95	   2060	2500	1853
	APR-JUL	970	1390	1670	95	1950	2370	1760
	APR-JUN	885	1260	1510	95	1760	2140	1585
COLUMBIA at Birchbank (1,2)	APR-SEP	36600	41500	   43800	100	   46100	51000	43810
	APR-JUL	29300	33300	35100	100	36900	40900	35140
	APR-JUN	21500	24400	25700	100	27000	29900	25670
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	48800	57400	   61300	95	   65200	73800	64780
	APR-JUL	41100	48300	51600	95	54900	62100	54500
	APR-JUN	32500	38100	40600 	95 	43100 	48700	42730
COLVILLE - PEND ORE			=======	' :====================================				
COLVILLE - PEND ORE Reservoir Storage (100			У			PEND OREILL - nowpack Analys		
	Usable		ole Storage			Numbe		======== Year as % of
Reservoir	Capacity		Last	:	rshed	of		=========
	i	Year	Year /	lvg		Data Si		_
ROOSEVELT	5232.0				ille River	1	183	71
BANKS	715.0	680.2	59	   Pend	Oreille Rive	er 6	81	90

Kettle River

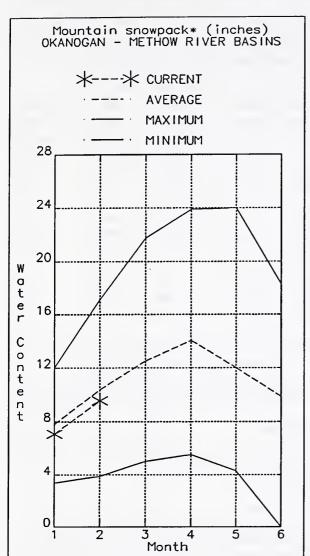
98

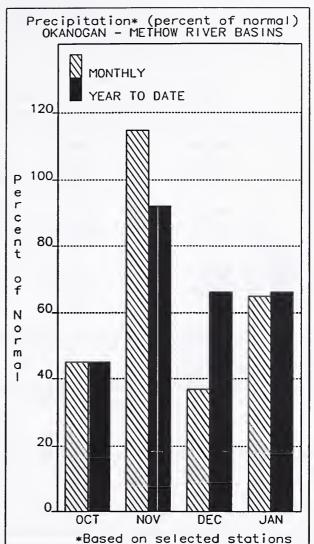
107

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

<sup>(2) -</sup> The value is natural flow - actual flow may be affected by upstream water management.





# OKANOGAN - METHOW RIVER BASINS: A

February 1, 1992: February 1 snow cover was 90% of average on the Okanogan, and 106% for the Methow Basin. January precipitation in the Okanogan-Methow was 65% of normal, with water year-to-date at 66% of average. January streamflow on the Methow River was 72% of normal, 75% on the Okanogan River, and 101% on the Similkameen. Snow water content at the Harts Pass SNOTEL, elevation 6500 feet, was 34.1 inches. Summer runoff forecast for the Okanogan River is 87% of normal; the Similkameen River, 90%, and the Methow River, 90% of normal. Temperatures were seven degrees above normal for the month. Storage in the Conconully Reservoirs is 15,600 acre feet, which is 66% of capacity and 113% of February 1 average.

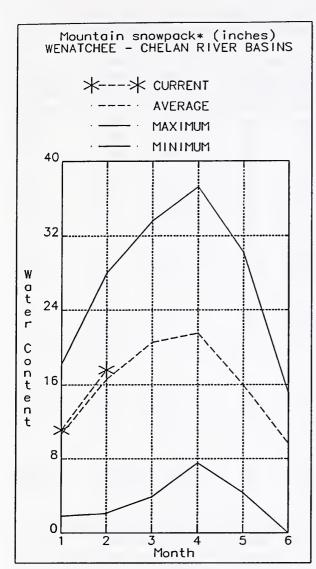
#### OKANOGAN - METHOW RIVER BASINS Streamflow Forecasts - February 1, 1992

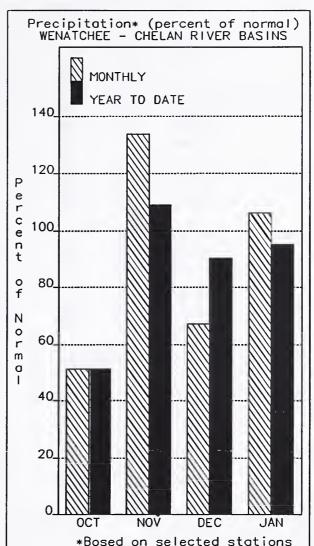
			=========	========	, .,, <u>-</u> ===========		=========			
		<<======	Drier ====	== Future Co	onditions ==	===== Wetter	====>>			
Forecast Point	Forecast	   ======		= Chance Of I	Exceeding * =		=======			
	Period	90%	70%	50% (Most	Probable)	30%	10%	30-Yr Avg.		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)		
SIMILKAMEEN nr Nighthawk (1)	APR-SEP	670	1160	1260	90	1360	1850	1399		
	APR-JUL	885	1080	1170	90	1260	1460	1304		
	APR-JUN	760	925	1000	90	1070	1240	1113		
OKANOGAN RIVER nr Tonasket (1)	APR-SEP	615	1210	   1420	87	1630	2220	1624		
	APR-JUL	670	1080	1260	86	1440	1850	1467		
	APR-JUN	615	920	1060	86	1200	1510	1234		
METHOW RIVER nr Pateros (1)	APR-SEP	500	740	850	90	960	1200	942		
	APR-JUL	460	685	790	90	895	1120	873		
	APR-JUN	385	590	685 	92	780 	985	746		
				 =========	! 	   <b> </b>		=======================================		
OKANOGAN - METHOW RIVER BASINS OKANOGAN - METHOW RIVER BASINS										
Reservoir Storage (10	OU AF) - End	от January 	, 	 	watershed Sr	nowpack Analys	is - Februa	ry 1, 1992		

Reservoir Storage (1000	AF) - End	Watershed Snowpack Analysis - February 1, 1992						
Reservoir	Usable   Capacity	*** Usabl This Year	e Storag Last Year	ge ***       Avg	Watershed	Number of Data Sites	This Year ====== Last Yr	
CONCONULLY LAKE (SALMON)	10.5	8.2	9.7	7.5	Okanogan River	22	66	89
CONCONULLY RESERVOIR	13.0	7.4	8.9	6.3	Methow River	4	82	106

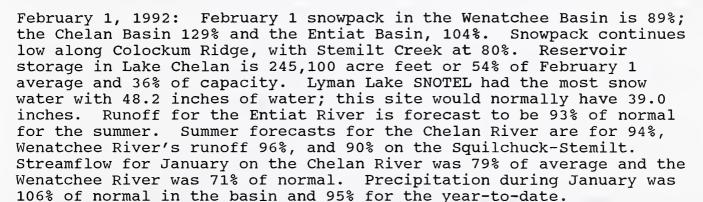
<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) The value is natural flow actual flow may be affected by upstream water management.





# **WENATCHEE - CHELAN RIVER BASINS:**



# WENATCHEE - CHELAN RIVER BASINS

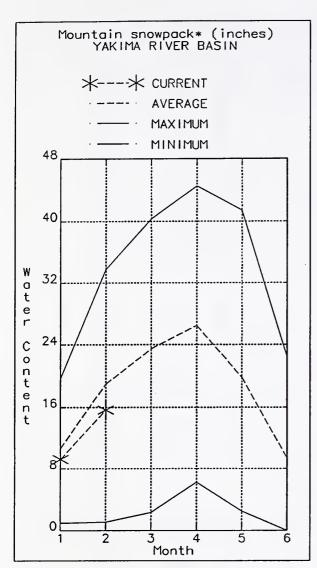
Streamflow Forecasts - February 1, 1992

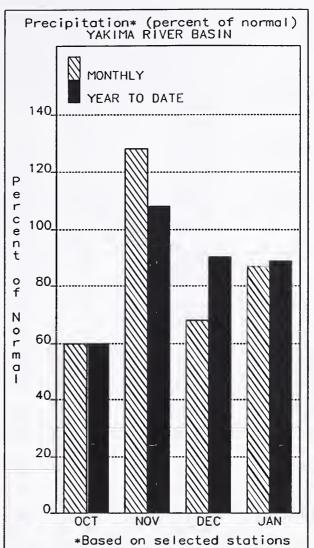
	:========		w Forecasts				==========		=========
		<<====	= Drier ===	=== F	uture Co	onditions ==	==== Wetter	====>>	
Forecast Point	Forecast	======	=======================================	== Cha	nce Of E	xceeding * =		=======	
	Period	90%	70%	50	% (Most	Probable)	30%	10%	30-Yr Avg.
		•	(1000AF)	•	-	(% AVG.)		(1000AF)	(1000AF)
CHELAN RIVER at Chelan (1)	APR-SEP	790	970	= ==== 1	1090	:=======    94	 12 <b>1</b> 0	1380	
CHEENN RIVER at Chetan (1)	APR-JUL	625	855	i	960	94	1060	1290	1160 1024
	APR-JUN	495	675	i	755	93	835	1020	812
STEHEKIN R. at Stehekin	APR-SEP	620	715	1	785	95	855	955	827
STEREKTA K. at Sterektii	APR-JUL	525	610	1	665	95	720	805	701
	APR-JUN	405	465	1	510	95 I	555	615	538
	AFR JON	403	403	i	310	,,	ررر	015	950
ENTIAT RIVER nr Ardenvoir	APR-SEP	152	187	i	210	93	235	270	227
	APR-JUL	135	168	1	190	92	210	245	206
	APR-JUN	113	138	!	155	92	172	197	169
WENATCHEE R. at Peshastin	APR-SEP	1000	1340		1570	96 I	1800	2140	1636
WEIGHT IN THE TESTING THE	APR-JUL	920	1220	i	1430	96	1640	1940	1485
	APR-JUN	750	995	i	1160	96	1330	1570	1204
				i		i			
STEMILT nr Wenatchee (miners in)	MAY-SEP	78	105	į	124	90	143	171	138
ICICLE CREEK nr Leavenworth	APR-SEP	210	285	i	335	91	385	460	370
	APR-JUL	190	260	İ	305	90	<b>3</b> 50	420	340
	APR-JUN	154	210	į	245	91	280	335	270
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	52800	61500	1	67000	95 I	72500	81000	70410
	APR-JUL	45200	52000	•	56700	95	61400	68200	59690
	APR-JUN	35600	41000	į ·	44600	95	48200	53600	46980
				 =====:		 		========	===========
WENATCHEE - CHELAN				1			- CHELAN RIV		m. 1 1002
Reservoir Storage (100	========= ============================	or January	y =========	! ======		Watershed Sno	•		• •
	Usable	*** Usabl	le Storage *	***			Numbe	r This	Year as % of
Reservoir	Capacity	This	Last	- 1	Water	shed	of	=====	
	1	Year	Year A	Avg			Data Si		Yr Average
======================================	 676.1	245 <b>.1</b>	503 <b>.1</b> 45	==== = 50.6		======= n Lake Basin		<b>=======</b> 81	129
				ĺ	F	4. <b>B</b> i	2	447	02
					Entia	t River	2	114	82
				1	Wenat	chee River	10	87	89
				ļ	Squil	chuck Creek	0	0	0
				 	Stemi	lt Creek	2	105	79
					Coloc	kum Creek	1	193	84
				i					

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

<sup>(2) -</sup> The value is natural flow - actual flow may be affected by upstream water management.





# YAKIMA RIVER BASIN: 4

February 1, 1992: January precipitation was 87% of normal and 89% for the water year-to-date. The outlook for irrigation water for the summer is good with February 1 reservoir storage for the five major reservoirs at 590,600 acre feet, 92% of average. February 1 snowpack is 79% based upon 19 snow courses and SNOTEL readings. summer streamflow forecasts for the Yakima Basin vary throughout the basin as follows: the Yakima River at Cle Elum, 92 %; Naches River, 82%; the Yakima River at Martin, 90%, Ahtanum Creek, 96%, and Tieton River 84%. January streamflows were varied with the Yakima River at Parker 71% of normal, 93% on the Yakima near Cle Elum, and 64% on the Naches River. Temperatures were five degrees above average for January. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U. S. Bureau of Reclamation's forecast for the total water supply available which includes adjustments for reservoir operation and irrigation return flow.

#### YAKIMA RIVER BASIN

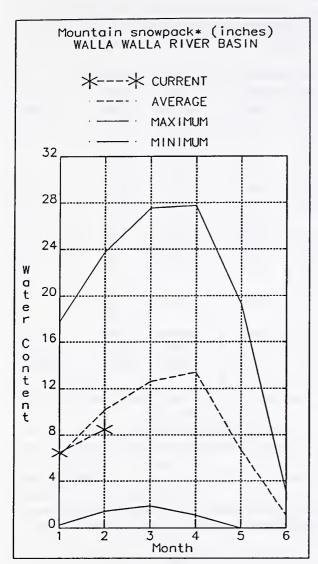
Streamflow Forecasts - February 1, 1992

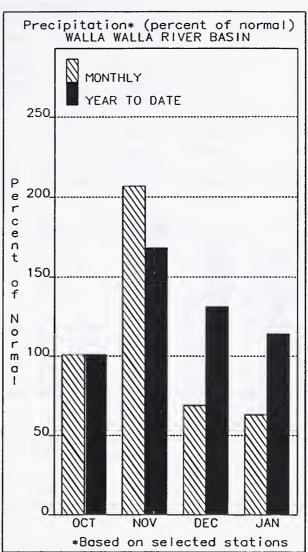
	=======	streamito							
		<<=====	= Drier =		Future Co	onditions ==	===== Wetter	====>>	
Forecast Point	Forecast	   ======	=======	==== Ch	ance Of E	xceeding * =			
	Period	90%	70%	5	0% (Most	Probable)	30%	10%	30-Yr Avg.
		(1000AF)			•	(% AVG.)		(1000AF)	(1000AF)
**************************************									
YAKIMA RIVER at Martin (1)	APR-SEP APR-JUL	103 88	114 104		122 111	90   90	130 118	142 134	135 124
	APR-JUN	78	92	- 1	98	90 I	104	118	109
	AFR SON	10	,,,	i	,0	, ,	104		107
YAKIMA RIVER at Cle Elum (2)	APR-SEP	710	785	i	840	92	895	970	915
	APR-JUL	635	705	- 1	750	90	800	870	832
	APR-JUN	550	610	!	650	90	690	750	721
VALUE DIVED TO BOOK (2)	ADD-CED	1180	1510	-	1730	87	1950	2270	1994
YAKIMA RIVER or Parker (2)	APR-SEP APR-JUL	1070	1360	- 1	1550	86 I	1740	2030	1805
	APR-JUN	945	1200	- 1	1370	86 I	1540	1790	1597
	AIR SON	, ,,,	1200	i	.5.0	i	1510		.,,,
KACHESS RIVER or Easton (1)	APR-SEP	84	104	i	113	96	122	142	118
	APR-JUL	80	97	- 1	105	95	113	130	111
	APR-JUN	72	87	!	94	95	101	116	99
CLE ELUM RIVER nr Roslyn (1)	APR-SEP	380	420	-	450	100	480	520	448
CLE ELOM RIVER III ROSTYII (1)	APR-JUL	325	380	- 1	405	99 I	430	485	409
	APR-JUN	330	375	i	398	96 I	420	465	346
	AI K OON	330	51.5	i	3,0	, ,	100	103	340
BUMPING RIVER or Nile (1)	APR-SEP	90	122	i	136	100	151	183	136
	APR-JUL	81	111	i	124	100	137	167	124
	APR-JUN	69	93	1	104	100	115	140	104
			400	1	440	05	407	440	***
AMERICAN RIVER or Nile	APR-SEP	82	100		112	95	124	142	118
	APR-JUL	76	93		104	95	115	132	109
	APR-JUN	64	78		87	95   I	96	110	92
TIETON RIVER at Tieton (1)	APR-SEP	137	175	i	200	84	225	265	237
	APR-JUL	100	148	i	170	85	192	240	200
	APR-JUN	82	121	ļ	138	85	156	194	162
	400.050	115	(40	!	705	05 1	000	0/0	670
NACHES RIVER or Naches (2)	APR-SEP	465	610	- !	705	85	.800	940	832
	APR-JUL APR-JUN	425 375	550 485	-	640 560	85   <b>8</b> 6	730 635	855 745	755 651
	7		100	i	•••	i	002	, ,,	
AHTANUM CREEK nr Tampico (2)	APR-SEP	26	38	ĺ	45	98	53	64	46
	APR-JUL	24	34	- 1	41	98	48	58	42
	APR-JUN	20	29	- !	35	97	41	50	<b>3</b> 6
				 	=======	 :==========			
YAKIMA RIVER BASIN					1	YAKIMA RI	VER BASIN		
Reservoir Storage (10	00 AF) - End	of January	Y		1	Watershed Sn	owpack Analys	is - Februa	гу 1, 1992
						=========			
Reservoir	Capacity	*** Usab This	Last	je	I I Water	chad	Numbe of		Year as % of
Resel VOIT	capacity;	Year	Year	Avg	#46.61	Siled	Data Si		
	************					**********			
KEECHELUS	157.8	97.2	116.7	96.0	Yakin	a River	20	110	83
KACHESS	239.0	148.3	194.8	170.0	Ahtar	num Creek	2	113	72
					l				
CLE ELUM	436.9	256.4	340.4	251.0					
BUMPING LAKE	33.7	11.0	16.1	9.0					
oon and enter					i				
RIMROCK	198.0	77.7	135.2	115.0					
					I				

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

<sup>(2) -</sup> The value is natural flow - actual flow may be affected by upstream water management.





#### WALLA WALLA RIVER BASIN:



February 1, 1992: January streamflow was 27% of normal on the Walla Walla River, 51% for the Snake River, and 49% on the Grande Ronde River near Troy. February 1 snowpack is at 84%. January precipitation was 63% of average, bringing the water year-to-date precipitation to 114% of normal. The forecast is for 80% of average streamflow in the Walla Walla River for the coming summer, the Grande Ronde, 74%; Snake River, 69%, and 72% for Mill Creek. Temperatures were five degrees above average for January.

#### \_\_\_\_\_\_\_

#### WALLA WALLA RIVER BASIN

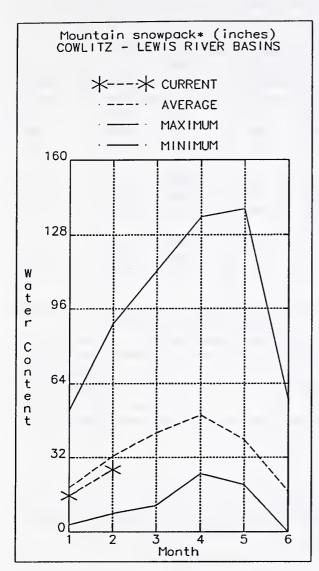
#### Streamflow Forecasts - February 1, 1992

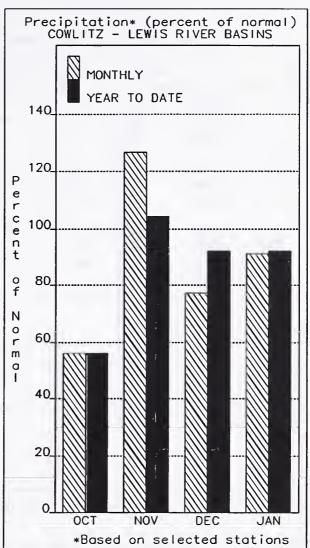
	<<=====	Drier ====	== Future Co	onditions ==:	==== Wetter	====>>	
Forecast	=======	=========	= Chance Of E	Exceedina * =:		 	
Period	90%	70%			30%	10%	30-Yr Avg
	(1000AF)	(1000AF)			(1000AF)	(1000AF)	(1000AF)
MAR-JUL	5 <b>2</b> 0	915	1090	74	1270	1660	= <b>======</b> 1471
APR-SEP	460	815	975	74	1140	1490	1312
APR-JUL	5690	12100	l   15000	69	17900	24300	21650
APR-SEP	6330	13500	16800	69	20100	27300	24360
APR-SEP	4.2	9.0	1   12.3	72	15.6	20	17.1
APR-JUL	4.1	8.9	12.2	72	15.5	20	16.9
APR-JUN	4.0	8.8	12.0	72	15.2	20	16.7
APR-JUL	32	38	1   42	79	46	52	53
APR-SEP	61300	84200	l   84200	85	84200	107000	98910
APR-JUL	53000	64300	72000	85	79700	91000	84710
APR-JUN	43200	52400	58600 I	85	64800	74000	68890
			! ============	, 			
	of January		l I				rv 1. 1992
						=======	
		_	•				Year as % o
Capacity				shed			
 :========			•	=========			_
			1		2	139	84
	Period  MAR-JUL APR-SEP  APR-SEP APR-JUL APR-JUL APR-JUN  APR-JUN  APR-JUL APR-JUN  APR-JUL APR-JUN  CAPR-JUL APR-JUN  BASIN  OO AF) - End  Capacity	Period   90%   (1000AF)   (1000AF	Period   90% 70%   (1000AF) (1	Period   90%   70%   50% (Most   (1000AF)   Period   90%   70%   50% (Most Probable)   (1000AF) (1000AF) (1000AF) (% AVG.)   (1000AF) (% AVG.)	Period   90%   70%   50% (Most Probable)   30%   (1000AF) (1000AF) (1000AF) (2 AVG.)   (1000AF) (1000AF) (3 AVG.)   (1000AF) (	Period   90%   70%   50% (Most Probable)   30%   10%   (1000AF) (1	

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

<sup>(2) -</sup> The value is natural flow - actual flow may be affected by upstream water management.





# COWLITZ - LEWIS RIVER BASINS: **(a)**

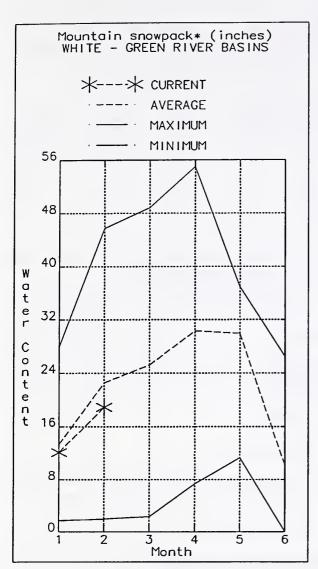
February 1, 1992: January precipitation was 91% of normal, bringing the water year-to-date precipitation to 92% of average. February 1 snow cover for the Cowlitz-Lewis River Basin is 74%. The Paradise Park SNOTEL contained the largest water content for the basin with 47.5 inches of water, normal February 1 water content is 38.5 inches. Forecasts for summer runoff in the Lewis River are 94%, and for the Cowlitz River, 94%. January streamflow on the Cowlitz River was 74% of average, and 78% on the Lewis River. Temperatures were five degrees above normal for January.

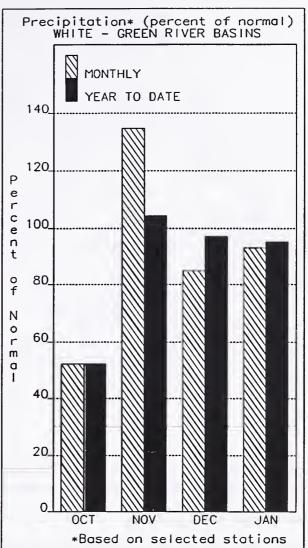
# COWLITZ - LEWIS RIVER BASINS Streamflow Forecasts - February 1, 1992

	.========	3010000100	=========	======================================	,	==========	:========	
		<<=====	Drier ====	== Future Co	onditions =	===== Wetter	====>>	
Forecast Point	Forecast	   =======	========	= Chance Of E	Exceeding *	==========	 	
	Period	90%	70%	50% (Most	-	l 30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
.EWIS RIVER at Ariel (2)	APR-SEP	675	945	========   1130	94	1320	1590	======================================
	APR-JUL	590	830	990	94	1150	1390	1051
	APR-JUN	525	730	875	94	1020	1230	933
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	750	1520	   1850	94	   2190	2960	1970
·	APR-JUL	905	1340	1630	94	1920	2360	1731
	APR-JUN	770	1140	1390	94	1640	2010	1477
COWLITZ R. at Castle Rock (2)	APR-SEP	1010	2200	   <b>256</b> 0	96	2920	4110	2667
	APR-JUL	1460	1920	2230	96	2540	3000	2325
	APR-JUN	1260	1650	1920	96	2190	2580	1995
:=============	=======================================		========		.========	 =========		==========
COWLITZ - LEWIS RI				ļ		- LEWIS RIVER		
Reservoir Storage (10	00 AF) - End	of January		l	Watershed S	nowpack Analys	is - Februa	ry 1, 1992
	Usable	*** Usabl	e Storage *	**		Numbe	r This	Year as % of
Reservoir	Capacity	This	Last	Water	shed	of	=====	
	1	Year	Year A	/g		Data Si	tes Last	Yr Average
=======================================				Cowli	tz River	7	99	96
				   Lewis	River	4	73	52

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

- 1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- 2) The value is natural flow actual flow may be affected by upstream water management.





# WHITE - GREEN RIVER BASINS: **(4)**

February 1, 1992: February 1 snowpack was 123% of normal on the White River and 66% in the Green Basin. Water content on February 1 at the Stampede Pass SNOTEL, at an elevation of 3860 feet, was 25.9 inches. This site has a February 1 average of 28.8 inches. January precipitation was 93% of normal, bringing the water year-to-date to 95% of average. Summer runoff is forecasted to be 95% on the Green River and 86% on the Cedar River. Temperatures were seven degrees above average for January.

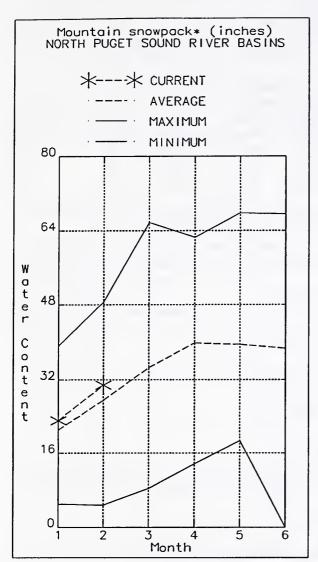
# WHITE - GREEN RIVER BASINS Streamflow Forecasts - February 1, 1992

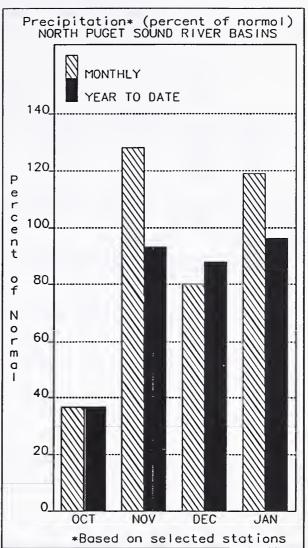
		stream tow	rorecasts	- February 1,	, 1992 			
		<<====== 	Drier ====	== Future Co	onditions ==	===== Wetter	· ====>>	
Forecast Point	Forecast	======		= Chance Of E	xceeding * :		:======	
	Period	90%	70%	50% (Most	Probable)	30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)		(% AVG.)	(1000AF)	(1000AF)	(1000AF)
GREEN R bl Howard Hanson Dam (2)	APR-SEP	169	230	=====================================	95	=====================================	370	285
	APR-JUL	154	210	245	95	280	335	257
	APR-JUN	138	187	220	94	255	300	234
CEDAR RIVER nr Cedar Falls	APR-SEP	40	59	   72 	86	   85 	104	84
WHITE - GREEN RIVER	R BASINS			 	WHITE - (	GREEN RIVER BA	.= <b>====</b> ===============================	-
Reservoir Storage (100	00 AF) - End	of January	,	1	Watershed Si	nowpack Analys	sis - Februa	ry 1, 1992
			e Storage *	**		Numbe	er This	Year as % of

Reservoir	Usable   Capacity  	*** Usabl This Year	e Storage Last Year	***       Avg	Watershed	Number of Data Sites	This Year	as % of
					White River	3	160	116
					Green River	7	74	58
					Cedar River	0	0	0

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) The value is natural flow actual flow may be affected by upstream water management.





# NORTH PUGET SOUND RIVER BASINS:



February 1, 1992: January streamflow in the Skagit River was 111% of average. Forecast for the Skagit River streamflow is 92% of normal for the spring and summer period. February 1 snow cover in the Skagit Basin is 118% of normal. Rainy Pass SNOTEL at elevation 4780 feet, has 34.8 inches of water content; normal February 1 water content is 24.5 inches. February 1 reservoir storage is near average, with Ross Lake Reservoir at 98% of normal and 72% of capacity. Precipitation for January was 119% of average with a water year-to-date at 96% of normal. January temperatures were five degrees above normal.

# NORTH PUGET SOUND RIVER RASINS

			PUGET SOUND Dw Forecasts			1992			
Forecast Point	Forecast	į					==== Wetter	i	
	Period	90%   (1000AF)	70% ) (1000AF)	j.	0% (Most P (1000AF) =======		30% (1000AF)	10%   (1000AF)	30-Yr Avg. (1000AF)
SKAGIT RIVER at Newhalem (2)	APR-SEP APR-JUL APR-JUN	1510 1270 985	1800 1510 1170		2000 1680 1300	92   92   92   92	2200 1850 1430	2490 2090 1610	2185 1830 1410
NORTH PUGET SOUND Reservoir Storage (1			·		     h		T SOUND RIVE		ry 1, 1992
Reservoir	Usable   Capacity	*** Usab This Year	ble Storage Last Year	*** Avg	   Waters 	hed	Numbe of Data Si	=====	Year as % of
ROSS	1404.1	1017.0	1051.9 10	33.9	=======   Snoqua	lmie River	2	66	58
DIABLO RESERVOIR	90.6	87.8	83.1	84.2	   Skykon	nish River	3	94	94
GORGE RESERVOIR	9.8	7.8		7.9	   Skagit	River	13	67	102

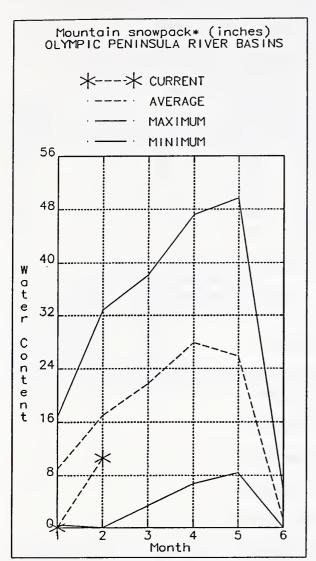
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

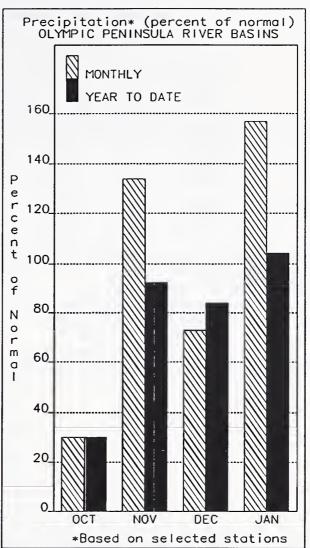
Baker River

392

65

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) The value is natural flow actual flow may be affected by upstream water management.





#### **OLYMPIC PENINSULA RIVER BASINS:**



February 1, 1992: January precipitation was 157% of average, with water year-to-date precipitation accumulation at 104% of normal. Precipitation at the Quillayute WSO was 23.99 inches during January. February 1 snow cover in the Olympic Basin is below normal with the Elwah River at 36%, the Dungeness River at 67% and Morse Creek at 78%. February forecasts of runoff for streamflow in the basin are for 85% of average on the Dungeness River and 90% on the Elwha River. The Big Quilcene can expect below normal runoff this summer. The Mount Crag SNOTEL near Quilcene had 11.3 inches on February 1, last year it had 7.5 inches. Temperatures were three degrees above normal for January.

# OLYMPIC DENINGUA DIVER DACING

OLYMPIC PENINSULA RIVER BASINS Streamflow Forecasts - February 1, 1992 <<===== Drier ====== Future Conditions ====== Wetter ====>> Forecast Point Forecast | Period | 90% 70% | 50% (Most Probable) | 30% 10% | 30-Yr Avg. (1000AF) (1000AF) (1000AF) (% AVG.) (1000AF) (1000AF) | (1000AF) DUNGENESS RIVER or Sequim APR-SEP 98 117 81 143 162 160 98 82 108 82 APR-JUL 118 134 131 APR-JUN 62 73 81 86 100 89 94 ELWHA RIVER nr Port Angeles APR-SEP 340 405 450 on 495 560 502 APR-JUL 285 340 375 90 410 465 417 OLYMPIC PENINSULA RIVER BASINS OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of January Watershed Snowpack Analysis - February 1, 1992 \_\_\_\_\_\_ Usable | \*\*\* Usable Storage \*\*\* Number This Year as % of Reservoir Capacity This Watershed of ================ Year Data Sites Last Yr Average Year Avg Elwha River 36 Morse Creek 78 Dungeness River 1 67 86 Quilcene River n Wynoochee River

<sup>\* 90%, 70%, 30%,</sup> and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

<sup>(1) -</sup> The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

<sup>(2) -</sup> The value is natural flow - actual flow may be affected by upstream water management.



